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10/588,832

05/14/2007

Roland Lyon

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05/12/2009

WESTMAN CHAMPLIN & KELLY, P.A.

SUITE 1400

900 SECOND AVENUE SOUTH

MINNEAPOLIS, MN 55402

EXAMINER

LOFFREDO, JUSTIN E

ART UNIT

PAPER NUMBER

3744

MAIL DATE

DELIVERY MODE

05/12/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/588,832 | Applicant(s) LYON, ROLAND | |
| | Examiner JUSTIN LOFFREDO | Art Unit 3744 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/14/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

In the instant case, the legal term "comprises" is recited in lines 2 and 7 of the abstract and should either be reworded or omitted.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "raised portion or profile" (claim 5), "extractor" (claim 9) and the "pad" (claim 11) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure

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is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. **Claims 1-20** are objected to because of the following informalities:

Consider claims 1, 16 and 20, wherein the recitation "with a view to being" (line 4) adds confusion to the claim and therefore should be changed to - -and- -.

Consider claim 1, wherein the recitation "this surface" should be written - -the surface- - in order to more clearly refer back to the surface of the wet filter being claimed.

Consider claims 18 and 19, wherein the recitation "slaving" (lines 2 and 4, respectively) is an example of atypical language used when referring a connection between elements, and should be changed similarly to - -connecting- -.

Consider claim 19, wherein the recitation "act" (line 4) appears to be a typographical error and should be written - -acts- -.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1, 6-8, 16, 17 and 20** are rejected under 35 U.S.C. 102(b) as being anticipated by Peer (US Patent No. 3,978,174).

Consider claims 1, 16 and 20. Peer discloses an evaporative air conditioner (12) for delivering conditioned air to vehicle cabins, the air conditioner (12) comprising: an evaporation chamber defined by housing assemblies (24, 26) (see Figure 4 below) (col. 2, L 39-56), air directed towards the cabin via air outlet (68) while passing through at least one wet filter (96); a discharge nozzle (121) and vaporizer disc (89) (corresponding to the claimed mister); an impingement ring member (40) (corresponding to the claimed run-off in the vicinity of the filter) (col. 5, L 5-35); and a guide plate (58) (corresponding to the claimed deflector comprising a deflector plate) (col. 3, L 20-23) (see also Figs. 1-4).

Consider claim 6. Peer discloses sidewall sections (49) having cutout portion (54) (corresponding to the claimed delivery air distribution box), air being pulled inwardly through the air distribution box and the deflector plate (58) running in line with the distribution box (see Fig. 2) (col. 3, L 5-23; col. 5, L 5-16; Figs. 2 & 4).

Consider claim 7. Peer discloses that the deflector plate (58) contains a cut-out section in an upper edge (see Figure 3 magnified below).

Consider claim 8. Peer discloses a component of the mister being a discharge nozzle (121) (corresponding to the claimed injector) positioned to discharge water onto the vaporizer disc (89) and to the run off (40), the water then contacting the incoming airflow (130) as shown at (134) (see Figure 4), which is at an outlet of the deflector (col. 4, L 46-55; col. 5, L 15-37; Figs. 2 & 4).

Consider claim 17. Peer discloses that the evaporative air conditioner (12) includes vents or openings in the air outlet (68) to direct the outlet air flow as desired (corresponding to the claimed diffuser) (col. 3, L 30-42; Fig. 2).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. **Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over Peer (US Patent No. 3,978,174) in view of Kelley (US Patent No. 5,361,600).

Consider claim 2. Peer discloses the invention as claimed, but fails to disclose the teach the specific material for which the filter is comprised.

Kelley teaches an evaporative air conditioner having a filter (130) such as a fiberglass mat to collect water (corresponding to the claimed hydrophilic material) (col. 5, L 35-38; Fig. 1), and it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the filter disclosed by Peer to comprise a hydrophilic material as taught by Kelley in order to collect any water not evaporated before the air flow contacting the mist reaches the filter; also resulting in the air being cooled as it passes through the filter and into the cabin of the vehicle.

9. **Claims 1-6, 8, 9, 16, 17 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyon (US Patent No. 4,360,368) in view of Peer (US Patent No. 3,978,174).

Consider claims 1, 16 and 20. Lyon discloses an evaporative air conditioner for vehicle cabins (ABST; col. 3, L 52-59), the air conditioner comprising: an evaporation chamber (see Figure 1 below), an outlet (11), at least one wet filter (12), a mister (col. 3, L 12; Fig. 5) made up of nozzles (9, 10), a deflector (see Figures 3 & 4 below) and a surface of the wet filter (12) facing an inside of the evaporation chamber (col. 2, L 62-col. 3, L 12, 39-67; Figs. 3-7).

Lyon fails to disclose a run-off provided in the vicinity of the filter such that air and mist are capable of converging towards the run-off and are being directed towards the surface of the filter, but Peer teaches an evaporative air conditioner (12) for vehicle cabins comprising an impingement ring member (40) (corresponding to the claimed run-off) (col. 1, L 15-20; col. 2, L 39-col. 3, L 5; Figs. 1, 2 & 4), and it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the evaporative air conditioner disclosed by Lyon to incorporate the run-off as taught by Peer in order to more effectively guide the water mist to the filter to separate the droplets from the conditioned air.

Consider claim 2. Lyon discloses that the filter (12) is of cellular, porous, fibrous or spongy material (col. 3, L 42-47) (corresponding to the claimed filter comprising a hydrophilic material).

Consider claim 3. Lyon and Peer disclose the invention as claimed, and Peer further discloses the run-off (40) including at least one impact lip (see Figure 4). While neither Lyon nor Peer disclose the impact lip extending into an upper portion of the filter in a plane substantially coincident with the plane of the surface of the filter, it would have been an obvious mechanical expedient to an ordinarily skilled artisan at the time of the invention to modify the evaporative air conditioner disclosed by Lyon and Peer so that the impact lip of the run-off extended into an upper portion of the filter in order to more effectively guide the water mist directly to the top of the filter so that water droplets are more successfully separated from the conditioned air flow; the water collected to be

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recirculated and reused as mist water within the evaporative chamber (Lyon, col. 3, L 39-52).

Consider claim 4. Peer discloses that the impact lip is formed by a fold (see Figure 4 below where the fold is indicated as the bend point of the run-off leading to the impact lip) made in a the run-off (40) (corresponding to the claimed drop-out plate), fastened beneath top wall (35) (corresponding to the claimed closing cover) of the evaporation chamber (col. 2, L 56-col. 3, L5; see Figure 4 below). It should be noted that applicant disclosed (specification, p.10, L 9-10) that "the mist converge[s] towards *drop-out plate (7) forming run-off*", and therefore the examiner has determined that the run-off (40) disclosed by Peer constitutes a drop-out plate as discussed.

Consider claim 5. Peer discloses that the drop-out plate has a profile / raised portion, i.e. the indicated area is raised above the impact lip (see Figure 4 below).

Consider claim 6. Lyon discloses a delivery air distribution box (6); the deflector comprising a deflector plate (see Figures 3 & 4 below) running in line with the distribution box (6) (see Figure 3 below) (col. 2, L 66-col. 3, L 38).

Consider claim 8. Lyon discloses that the mister made up of nozzles (9, 10) (corresponding to the claimed at least one injector) positioned in relation to the deflector, and an outlet of the deflector (see Figures 3 & 4 below).

Consider claim 9. Lyon discloses that the chamber includes a drain (13) (corresponding to the claimed drain-off point) paired with a supply pump (corresponding to the claimed extractor) (col. 3, L 46-52; Figs. 4 & 5).

Lyon fails to disclose at least two drain-off points; however it has been held that the mere duplication of the essential working parts of a device involves only routine skill in the art, and such duplication has no patentable significance unless a new and unexpected result is produced. In the instant case, the drain-off point is an essential working part of the device, wherein the duplication of the drain-off point results in the ability to drain condensate from merely another point on the evaporative chamber, which is neither a new nor an unexpected result since Lyon clearly discloses supplying a drain for the purposes of draining condensate from the evaporative chamber.

Consider claim 17. Lyon discloses a diffuser (18) (col. 3, L 52-59; Fig. 7).

10. **Claims 10-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyon (US Patent No. 4,360,368) and Peer (US Patent No. 3,978,174) as applied to claim 1, and further in view of Goettl (US Patent No. 3,147,319).

Consider claims 10 and 12. Lyon and Peer disclose the invention as claimed, but fail to disclose the chamber having a liner at the bottom including at least one of: a covering having a material with a plurality of tubes joined to one another or intercommunicating cells; or a profiling having at least one water pass-through.

Goettl teaches an evaporative cooler having a bottom (18) and a pan (54) (corresponding to the claimed liner) (col. 3, L 56) including plates (60) and (108) extending to the bottom of liner (54) (corresponding to the claimed covering with a material and also corresponding to the claimed profiling) having openings such as openings (120) (corresponding to the claimed plurality of tubes joined to one other and

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also corresponding to the at least one water pass-through, which is a water pass through opening) (col. 4, L 75-col. 5, L 6; col. 6, L 3-8; Figs. 1-3). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the evaporative cooler disclosed by Lyon and Peer to incorporate the liner and covering or profiling as taught by Goettl in order to provide a means to prevent water from spilling during transportation of the evaporative cooler (Goettl, col. 6, L 3-8).

Consider claim 11. Lyon, Peer and Goettl disclose the invention as claimed, including a pad (28) made of a soft foam material, but Goettl fails to disclose a pad being interposed between the covering and the bottom of the evaporative chamber (18). It would have been an obvious mechanical expedient to an ordinarily skilled artisan at the time of the invention to modify the space between the covering and the bottom of the chamber, that is between the bottom (18) and the liner (54), disclosed by Goettl to include a pad made of a soft foam material in order to provide a soft, tight connection between the liner and the bottom of the chamber to inhibit excessive movement between the liner containing condensate water and the evaporative chamber, thereby reducing the likelihood of spillage during transportation.

11. **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over Lyon (US Patent No. 4,360,368) and Peer (US Patent No. 3,978,174) as applied to claim 9, and further in view of Calvert (US Patent No. 5,606,868).

Consider claim 13. Lyon and Peer disclose the invention as claimed, including the extractor being connected to a tank (corresponding to the claimed water reservoir), which allows for a recycling configuration.

Lyon and Peer fail to disclose a valve that enables a shift between the recycling configuration and a discharge configuration, but Calvert teaches a portable evaporative cooler unit having a drain valve (24), which enables the removal of residual water (corresponding to the claimed waste water). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the water discharge configuration disclosed by Lyon and Peer to incorporate a drain valve for a discharge configuration for waste water removal as taught by Calvert in order to allow for the removal of old water so that fresher water may be pumped through the evaporative cooler, resulting in cleaner air cooling. Furthermore, it would have been an obvious mechanical expedient to an ordinarily skilled artisan to install a valve allowing a user to switch between the recycling configuration and the discharge configuration in order to provide a simple and reliable means to either allow the evaporative cooler to recycle the flow of water, or to drain the water so that it can be replaced periodically with clean water.

12. **Claims 14 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyon (US Patent No. 4,360,368) and Peer (US Patent No. 3,978,174) as applied to claim 1, and further in view of Kelley (US Patent 5,361,600).

Consider claims 14 and 15. Lyon and Peer disclose the invention as claimed, but fail to disclose a wetting means built into the wet filter; or the wetting means including a circulating system made of a porous material.

Kelley teaches a wettable pad (70) and filter (130) placed at the face of the pad (70) (the assembly corresponding to the claimed wet filter), wherein water is applied to the upper surface of the pad (70) at a distribution tube (80) via pump (85) which delivers water from sump (50) via line (86) (col. 3, L 47-col.4, L 3; col. 5, L 35-42; Fig. 1) (corresponding to the claimed wetting means); and the wetting means including a fibrous material or a pad of treated paper having channels therein (corresponding to the claimed porous material) (col. 3, L 52-58). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the filter of the evaporative cooler disclosed by Lyon and Peer to include the wetting means built into the filter as taught by Kelley in order to improve conditioning of the passing air by cooling via the evaporative effect.

13. **Claims 18 and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyon (US Patent No. 4,360,368) and Peer (US Patent No. 3,978,174) as applied to claim 16, and further in view of Meckler (US Patent No. 5,954,577).

Consider claims 18 and 19. Lyon and Peer disclose the invention as claimed, including a diffuser (18) (col. 3, L 52-59; Fig. 7).

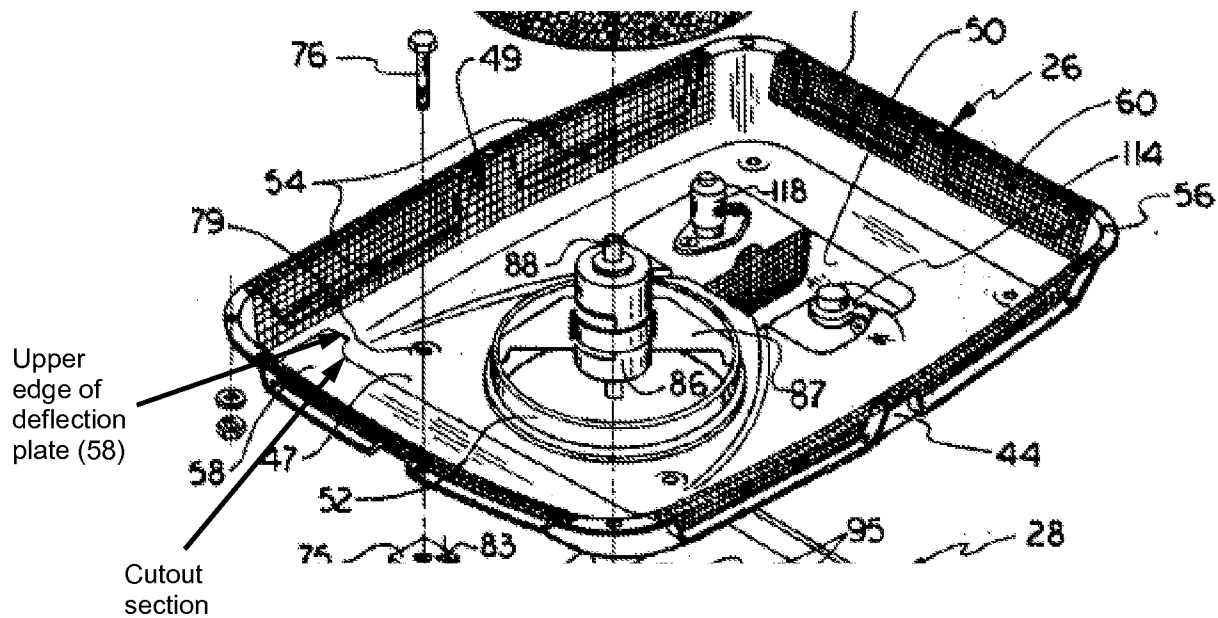
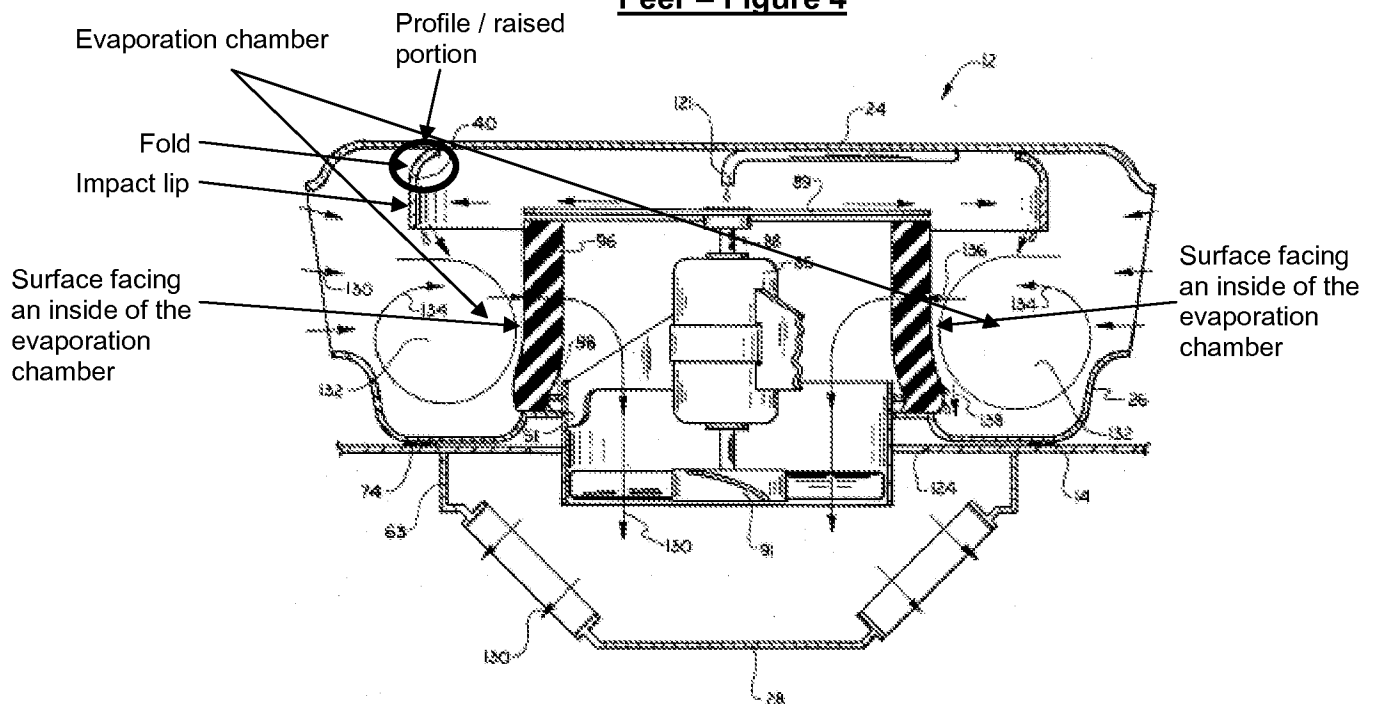
Lyon and Peer fail to disclose a means of connecting the flow rate of the air from the air conditioner to a pressurization of the cabin; or the connecting means acting on

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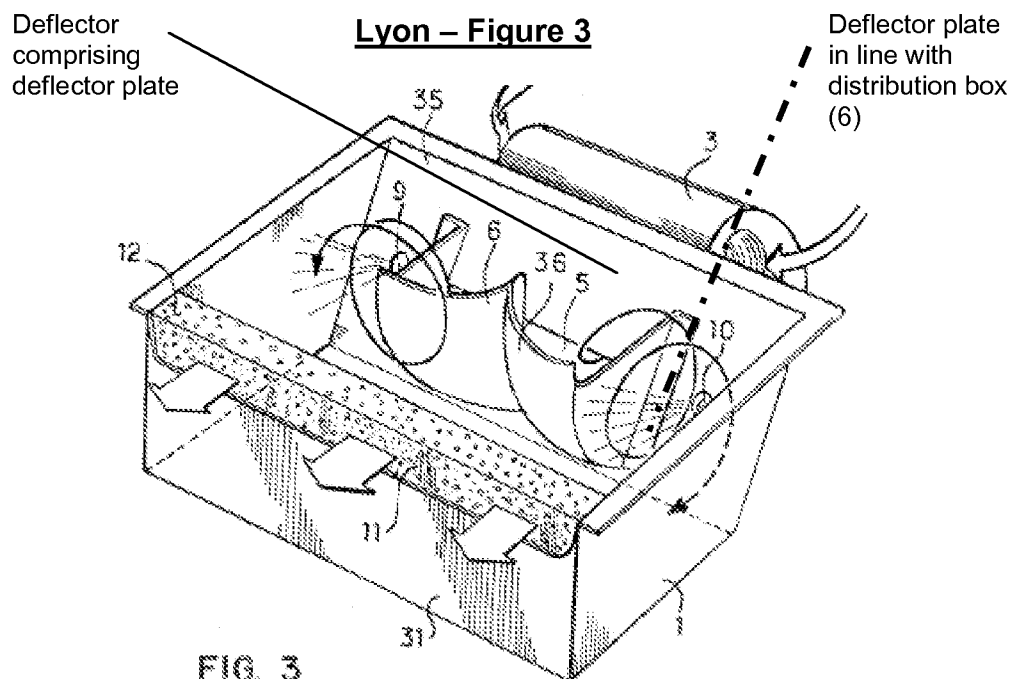
the diffuser so that air is able to be directed towards the operator position when pressurization of the cabin decreases, and pointed in another direction when pressurization increases. Meckler teaches an air circulation and ventilation system for vehicles which includes a decontamination assembly (30) having an air quality sensor and pressure sensor (corresponding to the claimed means of connecting) wherein pressure control can assume control of fan speed (corresponding to the connection between cabin pressurization and air flow, which is dependent upon fan speed); wherein the air quality sensor acts on the damper (38) (corresponding to the claimed diffuser) to open (corresponding to airflow being directed towards the operator) when contamination is detected at preset levels and to close (corresponding to airflow being directed in another direction) when contamination is below preset levels. When pressure drops, the fan speed increases so the airflow rate increases and air passes through diffuser (38) (i.e. the diffuser is open and directing air towards the operator), and therefore after a period of time when pressure increases and the contamination is determined to be below the preset level, the fan speed decreases so the airflow rate decreases and diffuser is closed (38) (ABST; col. 14, L 4-25; Figs. 1 & 2). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the evaporative air conditioning assembly within a vehicle disclosed by Lyon and Peer to incorporate a connecting means to operate the diffusers and adjust the airflow based on the cabin pressure as taught by Meckler in order to effectively maintain a clean and conditioned environment within the cabin while providing a convenient, automated damper controlling mechanism.

14. There are numerous examples of functional language recited in apparatus claims 1-20 such as: “a deflector *positioned to cause said delivery air and said mist to converge...and run off over this surface*” (claim 1, lines 9-13); “at least one impact lip *for said droplets*” (claim 3, line 2); and “a raised portion or profile *designed to evenly distribute the water over said lip*” (claim 5, line 2). Applicant should note that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. Since the prior art structure in the instant case is capable of performing the intended use, it meets the claim.

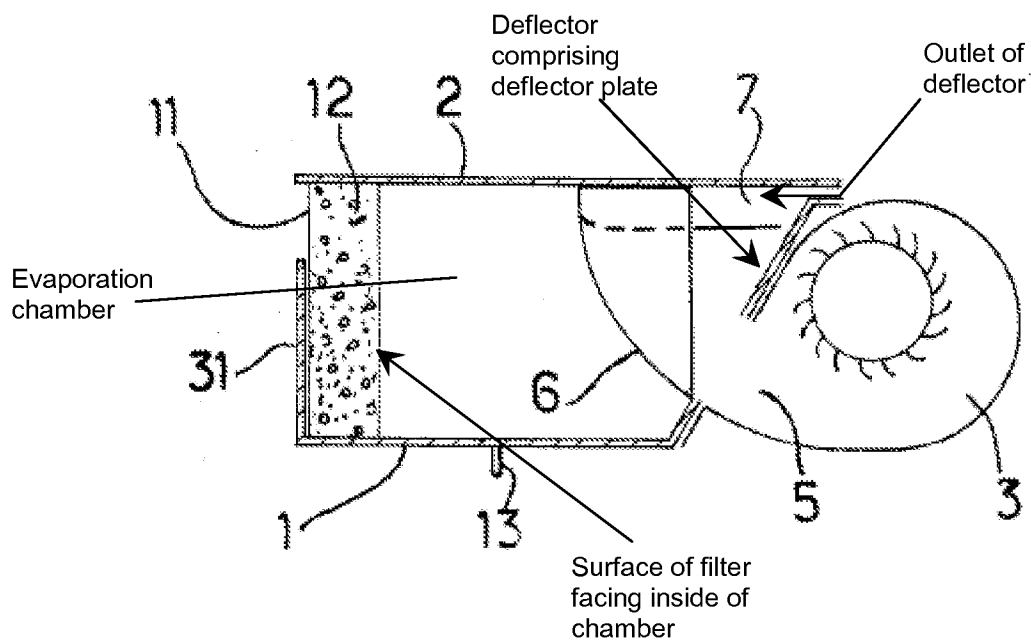
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Peer – Figure 3 (magnified)**Peer – Figure 4**

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Lyon – Figure 4



Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Gaona et al. disclose an evaporative cooler utilizing a misting system to condition air
- Kelley (US Patent No. 5,555,742) disclose an evaporative cooler incorporating a misting system and having a recirculation pump for a wet pad in contact with a filtering device
- Logue (US Patent No. 3,583,174) disclose an evaporative cooler to condition air sent to a vehicle cabin
- Anderson (US Patent No. 3,738,621) disclose a vehicle rooftop evaporative cooler having a water pump recirculation device and controllable vents

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUSTIN LOFFREDO whose telephone number is (571) 270-7114. The examiner can normally be reached on M - F 7:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler & Frantz Jules can be reached on (571) 272-4834 & (571) 272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cheryl J. Tyler/
Supervisory Patent Examiner, Art Unit 3744

/Justin Loffredo/
May 4, 2009